Administration and Policy in Mental Health, Vol. 31, No. 1, September 2003 (© 2003)

USE OF MENTAL HEALTH AND SUBSTANCE ABUSE SERVICES AMONG HIGH-COST MEDICAID ENROLLEES

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ABSTRACT: Users of mental health and substance abuse (MH/SA) services were examined among nonelderly high-cost Medicaid enrollees in 10 states in 1995. Although MH/SA service users constitute 11% of all Medicaid enrollees, they make up nearly a third of high-cost enrollees. Adults account for two thirds of this high-cost MH/SA group, and most frequently qualify for Medicaid through disability-related eligibility categories. In contrast, a majority of children in the high-cost MH/SA group are eligible for Medicaid through child-related categories, rather than disability. In diagnostic makeup, the high-cost group was somewhat more likely to have serious disorders than the general Medicaid MH/SA user population.

KEY WORDS: high cost; Medicaid; public MH/SA spending.

The Medicaid program accounts for more than a third of public spending for mental health and substance abuse (MH/SA) treatment (Coffey et al., 2000). For mental health services, it accounts for more than half of all public mental health spending administered at the state and local levels (Buck, 2001). Studies generally show that users of MH/SA services account for 7% to 13% of Medicaid enrollees, depending on the state and definition of MH/SA service use (Buck, Teich, Bae, & Dilonardo, 2001; Larson et al., 1998; Wright, Smolkin, & Bencio, 1995).

It has been recognized for some time that, for both publicly and privately insured populations, a small proportion of users generally account

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for a disproportionate share of costs (Taube, Goldman, Burns, & Kessler, 1988). As health care expenditures have continued to grow in recent years, the nature of this high-cost user group is increasingly of interest to administrators seeking to control or decrease costs. Many studies have focused on high-cost users having a particular illness or condition, such as asthma (Malone, Lawson, & Smith, 2000).

Despite Medicaid's importance to MH/SA services, however, only a few of these studies have specifically examined the characteristics of high-cost users of MH/SA services under Medicaid. Better knowledge of this group and its relationship to other high-cost users is necessary for understanding the characteristics of those who make the most use of Medicaid-supported MH/SA services, and also for assessing the potential impact of policies that seek to limit Medicaid expenditures. Such policies often implicitly or explicitly target those with the highest service use.

Holohean, Pulice, and Donahue (1991) focused on a group of "heavy users" of acute inpatient services in New York State, analyzing data separately for Medicaid claims and for New York State Psychiatric Center clients. For Medicaid, heavy users were equally distributed in terms of gender, and were relatively young (56% were between 19 and 39 years old). More than 50% of the adults were diagnosed with schizophrenia, and 23.7% had a diagnosis of a major affective disorder. For Medicaid users age 18 or under, 34.5% had a primary diagnosis of either conduct or adjustment disorders; an additional 28% had a diagnosis of either schizophrenia or a major affective disorder.

Overall, for these 10 states, nearly 30% of high-cost enrollees are users of mental health/substance abuse services.

Quinlivan and McWhirter (1996), examining data for a managed care plan administered by the San Diego County mental health authority, focused on those patients who had three or more inpatient MH/SA admissions within a 6-month period. In this frequent-admissions group of patients, 36% were diagnosed with schizophrenia, 8% with bipolar disorder, and 23% with schizoaffective disorder; 66% had a dual diagnosis, and 19% were diagnosed as having borderline personality disorder.

Another recent study examined all high-cost users in the Medicaid program for the state of Maryland in 1993 (Stuart & Weinrich, 1998). This study found that about three quarters of Medicaid spending in Maryland was generated by 10% of the Medicaid patients who used services. Children with special needs and/or mental health problems were among the categories with the highest cost per month. Almost 70% of non-institutionalized high-cost patients were hospitalized during the study year. Seri-

ous mental illness (affective psychoses, schizophrenia) and drug and/or alcohol dependence were included among the most frequent diagnoses for high-cost patients with hospitalizations. However, the data in the Maryland study did not detail the relative contribution of these MH/SA patients to the high-cost group.

These studies contribute to our understanding of high-cost Medicaid MH/SA service users. Nevertheless, they are limited in that they present data for only one state or county, and/or they do not examine MH/SA users in the context of all high-cost users. The following study addresses these limitations by analyzing Medicaid data for a group of 10 states, and examining the representation of users of MH/SA services in the high-cost user group. It also presents information about the demographic and diagnostic characteristics of this group.

METHOD

Data in this study were developed from the State Medicaid Research Files (SMRF) maintained by the Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration). The SMRF files provide uniform claims and eligibility data for selected states within the Medicaid Statistical Information System. Due to the collection, validation, and construction process, SMRF files usually are based on data that are several years old before they are potentially available to researchers. Further delay results from the need to complete agreements to gain access to the data and to conduct the actual analyses. At the time this study was initiated, SMRF files for 1995 were the most recent available.

Of the states for which 1995 research files had been developed, 10 were selected: Alabama, Arkansas, Delaware, Georgia, Kansas, Kentucky, New Hampshire, New Jersey, Vermont, and Wyoming. These states were chosen based on criteria related to geographic diversity, completeness and quality of data, and limited penetration of Medicaid managed care. This latter criterion was necessary because data generally reflect only capitation payments for managed care enrollees, and do not allow classification of services or expenditures by diagnosis.

Within each state's files, for certain individuals we excluded data from analysis. These exclusions were most commonly due to the lack of information that would allow a complete picture of service utilization and expenditures. Individuals falling into the following categories were excluded:

- Dually eligible for Medicaid and Medicare (mostly elderly)
- Age 65 and over
- Ineligible for Medicaid during study period

- Enrolled in capitated plans
- Missing sex or date of birth

For all but New Jersey, these exclusionary criteria eliminated 14% to 27% of enrollees, mostly due to dual eligibility status (largely elderly). For New Jersey, 38% of enrollees were eliminated from the analysis.

Analyses examined the use of MH/SA services by "high-cost" Medicaid enrollees—defined as persons whose total Medicaid expenditures were in the top 10% of all enrollees in the study population. Across the 10 states, high-cost enrollees accounted for 71% of all Medicaid expenditures for the study population.

Mental health/substance abuse users account for nearly a third of Medicaid expenditures for all high-cost enrollees.

Within the group of high-cost enrollees, users of MH/SA services were identified through claims with a primary MH/SA diagnosis, or a category of service indicating MH/SA specialty care. Diagnoses were those that most health care payers identify and reimburse as MH/SA conditions (International Classification of Diseases [ICD-9] diagnosis codes 291–292, 295, 296, 297–299, and 300–314). The selected diagnoses did *not* include Alzheimer's disease, dementias and cognitive disorders; mental retardation and developmental delays; medical conditions related to alcohol or drug disorders (e.g., alcoholic cirrhosis of liver); or MH/SA-related V codes (e.g., observation for mental conditions). MH/SA categories of specialty service were inpatient psychiatric services for enrollees 21 and under, and institutional psychiatric care for the aged. Chi-square tests assessed the significance of differences between high-cost MH/SA users and all MH/SA users. Buck and Miller (2002) provide additional information about data characteristics, and utilization and spending patterns for the MH/SA users.

RESULTS

For each state, the total number of Medicaid enrollees meeting the study's selection criteria is displayed in Table 1. This table also displays the percentage of these enrollees with identified use of MH/SA services, and the percentage of these users who are part of the high-cost group. Across the states, people who use MH/SA services make up 10.6% of non-elderly Medicaid enrollees, ranging from 7.1% in Alabama to 16.1% in New Hampshire. More than a quarter of MH/SA service users (27.2%) have total expenditures that

TABLE 1
Medicaid MH/SA and High-Cost MH/SA Users by State

State	*Equivalent Medicaid Enrollees*	*Percentage of Enrollees who are MH/SA Service Users*	*Percentage of MH/SA Service Users who are High-Cost Users*
Alabama	493,393	7.1	25.1
Arkansas	285,258	10.6	33.4
Delaware	65,517	9.3	29.6
Georgia	1,067,350	10.2	19.5
Kansas	246,972	13.1	27.5
Kentucky	585,720	12.7	30.5
New Hampshire	80,805	16.1	29.5
New Jersey	562,055	9.9	33.5
Vermont	90,662	15.6	32.5
Wyoming	49,368	10.8	23.4
All States (10)	3,527,100	10.6	27.2

Note. MH/SA=Mental health/substance abuse.

place them in the top 10% of enrollees. This proportion ranges from a fifth in Georgia to a third in Arkansas and New Jersey.

Table 2 shows the proportion of high-cost enrollees in each state who are MH/SA users. Further, the table displays the percentage of all expenditures for high-cost enrollees that are accounted for by MH/SA users, and what proportion are for MH/SA services, and for non-MH/SA medical services. For example, in Alabama, high-cost MH/SA users represent 17.8% of all high-cost enrollees and account for 21.2% of all expenditures for high-cost enrollees. Of this 21.2%, 8.8% is attributable to MH/SA services, and 12.4% is attributable to non-MH/SA services.

A substantial proportion of high-cost users are from eligibility groups that are not based on disability.

Overall, for these 10 states, nearly 30% of high-cost enrollees are users of MH/SA services, ranging from 17.8% to 50.8% for individual states. In contrast, for the general Medicaid study population (both high-cost and non-high-cost), the proportion who use MH/SA services is only 10.6% (Table 1). The variation among the states is likely attributable to differences with regard to Medicaid eligibility policies, coverage for optional services, and regional variations in service patterns such as rates of psychiatric hospitalization.

TABLE 2
High-Cost Medicaid MH/SA Users and Related Expenditures by State

State	Percentage of All High-Cost Enrollees who are MH/SA Users	Percentage of Expenditures for High-Cost Enrollees		
		MH/SA Services	Non-MH/SA Services for MH/SA Users	Total
Alabama	17.8	8.8	12.4	21.2
Arkansas	35.3	22.8	14.9	37.7
Delaware	27.3	13.5	16.8	30.3
Georgia	19.9	5.5	16.7	22.2
Kansas	35.9	16.5	16.6	33.1
Kentucky	38.6	16.2	22.2	38.4
New Hampshire	47.4	18.0	25.8	43.8
New Jersey	33.2	15.5	19.8	35.3
Vermont	50.8	28.5	22.7	51.2
Wyoming	25.2	7.1	19.0	26.1
All States (10)	28.8	13.4	18.1	31.5

Note. MH/SA=Mental health/substance abuse.

Table 2 also shows that MH/SA users account for nearly a third of Medicaid expenditures for all high-cost enrollees. Expenditures include MH/SA care as well as other, non-MH/SA medical care for MH/SA users. In most states, the proportion of expenditures for high-cost MH/SA users accounted for by non-MH/SA services is greater than that for the MH/SA portion. Across all 10 states, expenditures for MH/SA services represent 13.4% of all expenditures for high-cost enrollees. Expenditures for non-MH/SA services for MH/SA users account for 18.1% of all spending for high-cost enrollees. High-cost MH/SA users represent less than 3% of all non-elderly Medicaid enrollees, but account for 22% of expenditures for that population (data not shown).

The remainder of the analyses describe characteristics of the high-cost MH/SA group and how they compare to all non-elderly Medicaid MH/SA service users and all high-cost users. Across all states, females represented 62% of the high-cost MH/SA group, compared to 57% for all MH/SA users and 70% for all high-cost users. Whites were 62% of the high-cost MH/SA group; and they made up 60% of all MH/SA users and 55% of all high-cost users (data not shown). Table 3 shows the distribution of high-cost MH/SA users by age group compared to that for all MH/SA users (both high-cost and not). About half of all non-elderly Medicaid MH/SA

TABLE 3
High-Cost Medicaid MH/SA Users by Age Group

Age Group	*MH/SA High-Cost Users*		*All High-Cost Users*		*All MH/SA Users*	
	N	%	*N*	%	*N*	%
0–5	3,344	3.2	49,085	13.9	26,105	6.9
6–14	16,187	15.9	29,674	8.4	15,767	30.9
15–20	14,269	14.0	54,657	15.5	46,779	12.4
21–44	45,253	44.5	154,258	43.7	136,217	36.3
45–64	22,596	22.2	65,030	18.4	49,574	13.2
All Ages (0–64)	101,649	100.0	352,704	100.0	274,442	100.0

Note. Percentages may not add to 100 due to rounding. All differences in percentages between the high-cost MH/SA (mental health/substance abuse) users and the other groups are significant at the $p<.001$ level.

users are children and adolescents (ages 0–20). In contrast, only one third of high-cost MH/SA users and about 40% of all high-cost users are children and adolescents. The lower proportion of children and adolescents among the high-cost groups most likely reflects a higher prevalence of more expensive medical conditions, both psychiatric and non-psychiatric, among adults.

Table 4 compares high-cost MH/SA users with all high-cost users and all MH/SA users by Medicaid eligibility status. It might seem reasonable to assume that those in the Blind/Disabled category, who often qualify for Medicaid through their eligibility for federal Supplemental Security Income (SSI) support, are the most expensive recipients of MH/SA services. However, the information presented in Table 4 shows that this is only partially true. Children and adolescents in the Blind/Disabled group are over-represented in the high-cost MH/SA users group: while they represent about a fifth of all MH/SA users in this age group, they account for a third of high-cost child and adolescent MH/SA users. Nevertheless, the majority of children and adolescents in the high-cost MH/SA users group, as in the overall high-cost group, still come from the Child eligibility category.

Adults in the Blind/Disabled group also make up a higher percentage of the high-cost MH/SA users than they do in either the overall population of MH/SA or high-cost users. Nevertheless, it should be noted that a substantial proportion of high-cost users are from eligibility groups that are not based on disability.

Just as it might be assumed that high-cost Medicaid MH/SA users are

TABLE 4
High-Cost Medicaid MH/SA Users by Basis of Eligibility and Age Group

	Under 21 Years Old			*21–64 Years Old*		
Basis of Eligibility	*High-Cost MH/SA Users (N=33,800) (%)*	*All High-Cost Users (N=133,416) (%)*	*All MH/SA Users (N=188,651) (%)*	*High-Cost MH/SA Users (N=67,849) (%)*	*All High-Cost Users (N=219,288) (%)*	*All MH/SA Users (N=185,791) (%)*
Blind/disabled	32.8	23.6	20.6	73.0	54.6	58.2
Child	54.0	50.2	73.7	0.7	1.0	0.9
Caretaker relative or pregnant woman	6.9	22.8	3.5	26.1	44.2	40.6
Other/unknown	6.3	3.4	2.2	0.1	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note. The Blind/Disabled group consists of individuals who meet eligibility standards through assistance under SSI (federal Supplemental Security Income support) and related programs. Those in the Child category include children in the Aid to Families with Dependent Children (AFDC) program as well as other children eligible through programs such as those for foster care children, or for pregnant women and children. The category of Caretaker Relative or Pregnant Women primarily consist of AFDC adults and adults qualifying through the program for pregnant women and children. Other eligibility groups, such as aliens receiving emergency assistance, and those for which eligibility data were not available, are included in the Other/Unknown group. Percentages may not add to 100 due to rounding. All differences in percentages between the high-cost MH/SA (mental health/substance abuse) users and the other groups are significant at the $p<.001$ level.

concentrated in the disability-related eligibility groups, so it might be assumed that this group largely comprises those with more severe diagnoses. However, Table 5 shows that while there is somewhat greater representation of those with more severe disorders in the high-cost group, the overall diagnostic distribution still does not differ greatly from that of the general Medicaid MH/SA user population. In both age groups, only a minority of high-cost MH/SA users come from categories representing the most serious diagnoses.

In both the child/adolescent and adult age groups, only a minority of high-cost mental health/substance abuse users come from categories representing the most serious diagnoses.

For high-cost children, a larger proportion have prevalent diagnoses in the category of major depression and affective psychoses; a smaller percentage fall into the hyperkinetic syndrome category. All other categories differ by only a few percentage points. About two thirds of the high-cost children fall into the diagnostic categories of stress and adjustment reactions, hyperkinetic syndrome, neurotic and other depressive disorders, and emotional disturbances. High-cost MH/SA adults largely differ from the general MH/SA population in having a higher percentage of individuals with schizophrenia, but a lower percentage of those with neurotic and other depressive disorders. The categories of neurotic and other depressive disorders, major depression and affective psychoses, and schizophrenia account for nearly two thirds of this group.

DISCUSSION

This study examined users of MH/SA services among non-elderly high-cost Medicaid enrollees in 10 states in 1995. These enrollees were defined as persons whose total annual costs placed them in the top 10% of Medicaid enrollees. Some caution should be exercised in the use and interpretation of results from this study. Data represent only the experience of 10 states and do not include detailed encounter records that would allow information from managed care plans to be incorporated. Nevertheless, the study extends our knowledge of the characteristics of the users of MH/SA services who consume the largest proportion of Medicaid resources.

The chief finding of the study was that, although MH/SA service users constitute 11% of all Medicaid enrollees, they make up close to a third of high-cost enrollees. Additionally, their use of non-MH/SA services is even more important than their use of MH/SA services in determining their

TABLE 5
High-Cost Medicaid MH/SA Users by Diagnostic Category and Age Group

	Under 21 Years Old		*21–64 Years Old*	
Diagnostic Category	*High-Cost MH/SA Users (N=33,800)*	*All MH/SA Users (N=188,651)*	*High-Cost MH/SA Users (N=67,849)*	*All MH/SA Users (N=185,791)*
Adult Related Disorders	*52.2%*	*44.6%*	*78.7%*	*79.8%*
Schizophrenia	1.4	0.6	19.0	14.1
Major depression and affective psychoses	11.5	4.5	19.7	17.3
Other psychoses	1.4	0.7	3.7	2.9
Neurotic and other depressive disorders	13.0	10.0	24.9	32.3
Stress and adjustment reactions	22.8	27.3	7.9	10.2
Personality disorders	0.7	0.5	1.6	1.5
Other mental disorders	1.4	1.1	2.0	1.5
Child/Adolescent Related Disorders	*43.0*	*52.6*	*4.9*	*5.8*
Childhood psychoses	2.7	1.6	0.4	0.2
Conduct disorders	9.0	7.1	0.9	0.8
Hyperkinetic syndrome	16.4	29.6	0.3	0.5
Emotional disturbances	12.7	11.1	0.4	0.2
Special symptoms and syndromes	2.2	3.2	2.9	4.1
Substance Use Disorders	*4.3*	*2.6*	*16.4*	*14.4*
Drug psychoses	0.1	0.1	0.4	0.3
Drug dependence and nondependent drug abuse	2.7	1.6	8.3	6.9
Alcoholic psychoses	0.0	0.0	0.8	0.5
Alcohol dependence and nondependent alcohol abuse	1.3	0.9	6.5	6.0
Tobacco use disorder	0.1	0.1	0.4	0.6
Unknown Diagnosis	*0.6*	*0.1*	*0.0*	*0.0*
Total	100.0	100.0	100.0	100.0

Note. Percentages may not add to 100 due to rounding. All differences in percentages between the high-cost MH/SA users and all MH/SA (mental health/substance abuse) users are significant at the $p<.001$ level.

high-cost status. Two thirds of the high-cost MH/SA group are adults. Compared to all Medicaid MH/SA users, they are somewhat more likely to be white and female. About three quarters of the high-cost MH/SA adults qualify for Medicaid through disability categories, but this characterizes only a third of the high-cost MH/SA children. In diagnostic makeup, neither of the high-cost groups differs greatly from that of the overall Medicaid MH/SA population.

Although mental health/substance abuse service users constitute 11% of all Medicaid enrollees, they make up close to a third of high-cost enrollees.

Because Medicaid restricts payment for psychiatric institutional care, some may believe that users of MH/SA services are not among the more expensive groups of Medicaid beneficiaries. However, this study demonstrates otherwise. This is the case partly because of Medicaid's coverage of inpatient psychiatric care in general hospitals, as well as considerable utilization of non-psychiatric medical services by MH/SA users.

Findings from the current study suggest that effective planning for high-cost MH/SA service users in Medicaid requires the planners to pay particular attention to issues concerning the integration and coordination of general medical and MH/SA care. Some research already shows that some types of serious mental disorders are associated with chronic medical conditions (Wells, Rogers, Burnam, Greenfield, & Ware, 1991). Further research to learn more about the nature of general health care needs and services utilization for persons with serious mental illness in Medicaid would aid such efforts.

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